

## NOTES ON AUSTRALIAN ORCHIDS.

A REVIEW OF THE SPECIES *DENDROBIUM TERETIFOLIUM* R.BR.

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(Plate iv.)

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Robert Brown's type form of *Dendrobium teretifolium* came from the Port Jackson area of New South Wales, where it may still be seen in secluded spots, clinging to the trunk or branches of the Swamp Oak (*Casuarina glauca*). A somewhat ungainly plant when not in bloom, the advent of early spring transforms it into one of the daintiest and most attractive of our epiphytes, with its perfumed wealth of feathery cream-white racemes. It extends southward at least as far as Mount Dromedary, while to the west a very distinctive form occurs in the Blue Mountains. Northward the species wanders far into the Queensland tropics; but I have been unable so far to trace the type form beyond the Richmond River, N.S.W. Several attempts have been made to classify the variations, but from various causes these have hardly been successful, and considerable irritating confusion has resulted. The present paper is an attempt to clarify the situation. I have had a wide experience, in the field, of the type form since 1909, and of the form here recognized as var. *Fairfaxii* (Fitzg. & v.M.) Benth. since 1923: of the two other forms dealt with, I have received ample material from correspondents, and have had plants under cultivation.

It has been suggested that where variants in a species are themselves variable—as is the case in *D. teretifolium*—it is better to include them all under one comprehensive description of the species, rather than attempt to define somewhat elusive variations. To this I would reply that (1) any description of *D. teretifolium* which could be framed to include even the outstanding variations from the type, would be extremely cumbersome and involved; (2) there are certain variants which differ in some of their characteristics so markedly from the type that they surely merit varietal recognition. One of these, indeed, was described by R. D. Fitzgerald and Baron von Mueller as a new species, and were it not for the discovery of intermediates linking this with the type, *D. Fairfaxii* might still be considered specifically independent of *D. teretifolium*.

Bentham describes the labellum and column as follows: "Labellum about half as long as the sepals, lanceolate, canaliculate, acuminate and recurved, the lateral lobes very small, the disk dotted with red and bearing 3 undulate raised lines or plates. Column dotted with red." To this I should venture to add, after the word *acuminate*, "or filiform", and after the word *red* in both cases, "or purple". It has been attempted to distinguish one or two forms from the type by differences in the length of the labellum, and variations in the contour

of its margins and the colour of the raised lines. From my examination of very numerous specimens I am thoroughly convinced that these distinctions cannot be relied upon. Except in the case of the North Queensland plant, which appears to vary hardly at all, the different features of the labellum which have been recorded as characteristic of this or that form, are interchangeable between all the forms. This statement holds good for the column also. I have reached this conclusion only after the most careful and prolonged investigation.

In the *Sydney Mail* of September 21, 1872, a description was published of a *Dendrobium* discovered by R. D. Fitzgerald in the brush forests of Mount Tomah, Blue Mountains, N.S.W. The description was prepared by Baron von Mueller, and was accompanied by a woodcut by Fitzgerald. In compliment to the proprietor of the "Mail", the plant was named *D. Fairfaxii*. Unfortunately the description and the woodcut do not agree, and in the table of comparison between the new species and *D. teretifolium* it is quite impossible to reconcile certain of the statements as they appear, with the known facts: by some mischance, characteristics of the two forms were transposed. Fitzgerald's woodcut, however, accurately represents the new plant, which is now familiar to orchid students in New South Wales, and is by no means confined to the Blue Mountains. Bentham (*Fl. Aust.*, vi, 285) noted the discrepancy between woodcut and description. He reduced *D. Fairfaxii* to a form of *D. teretifolium*, and this decision was endorsed by Fitzgerald himself in Moore and Betche's "Handbook of the Flora of New South Wales".

The general appearance and habit of this form distinguish it so strikingly from the type that for a year or two after my first acquaintance with it I was strongly disposed to advocate its restoration to specific rank. But from 1924 to 1929 I had ample opportunity to study both the type and the variety in the Paterson and Allyn valleys of New South Wales. On the swamp oaks in open forest country, only the type form was found. The plants showed considerable variation in the dimensions of the flowers, length and colouring of the labellum, etc., but in no case was there any approach to the special characteristics I associated with var. *Fairfaxii*, which I had studied in brush forests at Bullahdelah, 60 miles away. In brushes along the Paterson and Allyn valleys, however, *Fairfaxii* was found in abundance, agreeing exactly with the Bullahdelah plants. Then, about the edges of the brushes, I began to find plants combining the features of both forms: in a few instances flowers of both kinds were borne on the same plant. I was steadily driven to the conclusion, which has been confirmed by subsequent investigation, that *Fairfaxii* is the brush-forest form of *D. teretifolium*. I have never seen or heard of the type form being found in a brush forest. I have never known *Fairfaxii* to occur in open country, except in a few instances where brushes had once existed, but had been cleared away.

The features which distinguish this variety from the type are as follow:

1. Leaves (in the adult plant) at least twice as numerous, often more: always very slender indeed, and flaccid: pale green unless exposed freely to direct sunlight.
2. Flowers either in pairs or solitary: occasionally in two pairs, or raceme with one pair and a solitary flower.
3. Petals and sepals hardly recurved, most commonly straight, but often slightly *incurving*.
4. Base of petals and sepals inside (and often outside) heavily striate with deep red-brown or purplish-brown.

These features in combination give the plant an appearance strikingly different from that of the type.

F. M. Bailey (*Queensland Flora*, v, 1534) describes another form under the name var. *aureum*, with flowers of a deep golden yellow. I can find no appreciable difference between this and the common yellowish-green form of southern Queensland and the extreme north coast of New South Wales, and I think they should be taken together. This variety is morphologically very close to *Fairfaxii*, but the leaves are not nearly so numerous and are often robust, and the perianth-segments are more spreading; while the very distinctive colouring—all other forms being white or pale cream—is almost sufficient of itself to justify Bailey's name.

On the same page Bailey records var. *Fairfaxii* for Queensland, but the description he gives is certainly not that of the plant figured by Fitzgerald and familiar to orchid collectors in New South Wales. I suggest that possibly he endeavoured to fit the North Queensland form of the species into the tabulation of *D. Fairfaxii* as it appears in Mueller's original description, although it is strange that he makes no allusion to the discrepancy between this and Fitzgerald's woodcut.

The North Queensland form is really the most distinctive of all. The arrangement and form of the racemes exhibit so marked a departure from the type that I found it difficult to accept the two as conspecific; but the individual flowers are morphologically identical. In the type, the racemes are scattered and divergent, and upon each raceme the flowers also (4 to 8) are very divergent, on long stalklets. In the North Queensland plant the racemes are occasionally solitary, but normally two to five are clustered together directly at the base of a leaf. The axis of the raceme is quite straight, with the flowers (4 to 15) arranged along it in the form of a spike, though shortly stalked. A raceme of this form, in fact, if detached from the plant, would almost certainly be taken at first glance to belong to *D. linguiforme* Swz., or *D. aemulum* R.Br. The leaves of the plant agree fairly with the type, but are often much more robust and longer, light green in colour. I propose for this form the varietal name *fasciculatum*, alluding to the clustered racemes.

All four forms are reported to produce occasionally plants with flowers twice as large as the usual size. I can confirm this in regard to the type, var. *Fairfaxii*, and var. *aureum*, but all flowers of the tropical form seen by me are slightly under the average.

I am indebted to the following for specimens and plants from various localities received over a period of several years: Mrs. H. Curtis, Tambourine Mountain, S. Queensland; Dr. H. Flecker and Messrs. W. F. Tierney and G. Bates, all of Cairns, N. Queensland; Mr. K. Macpherson, of Proserpine, N. Queensland; Mr. F. Fordham, Brunswick Heads, N.S.W. Mrs. C. A. Messmer, of Lindfield, N.S.W., kindly sent full details of the original description of *D. Fairfaxii*, and Dr. R. S. Rogers offered some criticism of the first draft of this paper which induced me to modify some of the remarks there made. An admirable photograph by Mr. W. H. Nicholls of a raceme of var. *fasciculatum* proved very useful for purposes of comparison.

DENDROBIUM TERETIFOLIUM R.Br., var. FASCICULATUM, n. var.

Folia saepe robustissima, 5-60 cm. longa. Racemi fere spicati, plerumque 2-5 ad folii basem fasciculati. Flores 4-15, albi.—Tropical Queensland.

*Key to the Determination of the Four Forms of D. teretifolium Recognized in this Paper.*

Labellum and column varying in all forms approximately as indicated in the text. Length of perianth-segments very variable in all.

Type.	Var. <i>Fairfaxii</i> .	Var. <i>aureum</i> .	Var. <i>fasciculatum</i> .
Leaves few or numerous, 8-35 cm. long, average diameter 4-5 mm., dull green or purplish-brown, relatively rigid.	Leaves usually very numerous, up to 60 cm. long, very slender, light green or, in exposed situations, purplish-brown, flaccid.	Leaves variable, often as in v. <i>Fairfaxii</i> , but sometimes very robust.	Leaves sometimes more robust and longer than in any other form; never as slender or flaccid as in v. <i>Fairfaxii</i> , pale green.
Racemes 6-10 cm. long, the axis often branching and never quite straight; 1 to 4 (usually 3 or 4) divaricate near the base of a leaf.	Racemes 2-5 cm. long, axis as in the type; 1 or 2 near the base of a leaf.	Racemes as in the type or as in v. <i>Fairfaxii</i> .	Racemes pale, rather more robust, 5-8 cm. long, axis straight and unbranched; 1 to 4 or 5 clustered at the base of a leaf.
Buds green.	Buds green or brown.	Buds green or brown.	Buds white.
Flowers 4 to 9, cream to white.	Flowers 1 to 4, most frequently in pairs, usually white, occasionally cream.	Flowers 1 to 6 or 7, deep-golden-yellow or yellowish-green.	Flowers 4 to 15, very pure white.
Perianth-segments inside near the base spotted or streaked with red or purple, prominently recurved, especially the paired sepals.	Perianth-segments inside (and often outside) near the base striate with deep red-brown, hardly recurved but often slightly incurved.	Perianth-segments striate as in v. <i>Fairfaxii</i> , sometimes recurved.	Perianth-segments often without any markings, or with light streaks of purple, only slightly recurved.

## NEW RECORDS.

*Sarcochilus spathulatus* Rogers.—This species was discovered by Mrs. H. Curtis on Tambourine Mountain, Q., in 1925, and by myself a few days later in the foothills of Barrington Tops, N.S.W. It was not recorded again for nine years, and was supposed to be rare. In October, 1934, I visited the Bellingen Valley in the north coast district, N.S.W., and the adjacent Dorrigo highlands. Mrs. D. J. Barr of Bellingen found *S. spathulatus* in a ravine 12 miles north of the town, and subsequently we collected it in abundance on the Dorrigo Mountain Cutting and in brush forests of the Dorrigo area, where it is quite common.

*Thelymitra chasmogama* Rogers.—This beautiful red *Thelymitra*, a recent discovery in South Australia, was found by Mr. M. W. Nicholls at Kurri Kurri, N.S.W., in Sept., 1934, the determination being endorsed by Dr. Rogers. It is allied to *T. luteociliata* Fitzg., but is larger, and the column is different. This is quite a notable addition to the orchids of the South Maitland coalfields, to which Mr. Nicholls has further added *Pterostylis grandiflora* R.Br.

## EXPLANATION OF PLATE IV.

- 1.—*D. teretifolium*, type form, Woy Woy, N.S.W. The arrangement of the flowers is so divaricate that in a close-up picture focussing is very difficult.
- 2.—Var. *Fairfaxii*, Paterson, N.S.W.
- 3.—Var. *aureum*, yellowish-green form, Tambourine Mountain, S. Queensland.
- 4.—Var. *fasciculatum*, Cairns, N. Queensland.